Remarks

The above Amendments and these Remarks are in reply to the Office Action, Paper No. 11, mailed December 4, 2003. An appropriate Petition for Extension of Time to Respond is submitted herewith, together with the appropriate fee.

I. Summary of Examiners Rejections

Prior to the Office Action mailed December 4, 2003, claims 1-10 and 12-24 were pending in the Application. In the Office Action, the Examiner rejected claims 1-10 and 12-24 under 35 U.S.C. 103(a) as being obvious over Hamid (U.S. Patent No. 5,655,109) in view of Barford et. al. (U.S. Patent No. 5,946,482, hereafter Barford).

II. Summary of Applicants' Amendments

The present Response amends claims 1, 5, 7, 10, 17 and 21, leaving for the Examiner's present consideration claims 1-10 and 12-24. Applicant reserves the right to prosecute any originally presented claims in a continuing or future application.

III. Claims Rejection under 35 U.S.C. § 103(a)

In the Office Action mailed December 4, 2003, the Examiner rejected 1-10 and 12-24 under 35 U.S.C. 103(a) as being obvious over Hamid (U.S. Patent No. 5,655,109) in view of Barford et. al. (U.S. Patent No. 5,946,482, hereafter Barford).

Claim 1

Claim 1 has been amended to more clearly define the embodiment therein. Applicant respectfully submits that Claim 1, as amended, is neither anticipated by nor obvious in view of the cited references. Claim 1 presently defines:

1. A method of making a synthesis plan for use in mixed signal circuit synthesis, comprising the steps of:

developing a mixed signal synthesis library, said mixed signal synthesis library including simulation models specified in a mixed signal synthesis language that represent digital and analog library functions parameterized to a users performance specifications, characteristic functions of design parameters, test harnesses, and netlists of mixed-signal functions parameterized for sizing to achieve a user's performance specifications; and

developing a mixed signal synthesis plan for use with said mixed signal synthesis library, comprising the substeps of

determining a circuit comprising at least one set of circuit elements,

identifying a set of parameters for construction of said circuit elements,

simulating operation of said circuit at a set of points, each point defined by varying at least one of said parameters,

consolidating results from the simulation operation, and

storing the consolidated results of said simulation in a behavioral model of said plan;

wherein the mixed signal synthesis plan can be subsequently executed to invoke a synthesis toolset upon the library in a particular sequence to synthesize a circuit.

Claim 1 defines that the method is directed to making a plan for use in mixed signal circuit synthesis, and that the method includes a step of developing a mixed signal synthesis library that includes simulation models specified in a mixed signal synthesis language that represent digital and analog library functions parameterized to a users performance specifications, characteristic functions of design parameters, test harnesses, and netlists of mixed-signal functions parameterized for sizing to achieve a user's performance specifications. Claim 1 further defines developing a mixed signal synthesis plan for use with said mixed signal synthesis library, and that the mixed signal synthesis plan can be subsequently executed to invoke a synthesis toolset upon the library in a particular sequence to synthesize a circuit.

Hamid (U.S. Patent No. 5,655,109) discloses a method and apparatus for automating the process of characterizing a standard cell library at multiple operating points. (Abstract). A CHARS utility sensitizes each arc of each cell of the cell library and then runs a matrix of experiments, stepping input transition times against output loads, for each sense of each arc of each cell to compute timing model timing coefficients for input to a synthesis and optimization tool. (Abstract).

However, Applicant respectfully submits that Hamid does not appear to teach mixed-signal synthesis. Nor does Hamid appear to teach developing a mixed signal synthesis library, or that the mixed signal synthesis plan can be subsequently executed to invoke a synthesis toolset upon the library in a particular sequence to synthesize a circuit.

Barford (U.S. Patent No. 5,946,482) discloses a method and apparatus for using frequency domain data in a time-based simulator. (Abstract). The method provides for circuit modeling and simulation which is accurate across a wide frequency range, which is stable for transfer functions of high order, and which is quickly and efficiently performed for large circuits. (Abstract). However, Applicant respectfully submits that Barford similarly does not teach mixed signal synthesis, or any of the features associated therewith, including developing a mixed signal synthesis library, or that the mixed signal synthesis plan can be subsequently executed to invoke a synthesis toolset upon the library in a particular sequence to synthesize a circuit.

Since neither Hamid nor Barford teach mixed signal synthesis, Applicant respectfully submits that it would not have been evident to combine these references to suggest the use of mixed signal synthesis in developing a mixed signal synthesis library, developing a mixed signal synthesis plan for use with said mixed signal synthesis library, and executing the plan to synthesize a circuit. In view of the above amendments and comments, Applicant respectfully submits that Claim 1, as amended, is neither anticipated by nor obvious in view of the cited references, and reconsideration thereof is respectfully requested.

Claims 5, 7, 10, 17 and 21

The comments provided above with respect to Claim 1 are hereby incorporated by reference. Claims 5, 7, 10, 17 and 21 have been amended similarly to Claim 1 to more clearly define the embodiments of the invention therein. For similar reasons as provided above with respect to Claim 1, Applicant respectfully submits that Claims 5, 7, 10, 17 and 21, as presently amended, are likewise neither anticipated by, nor obvious in view, of the cited references, and reconsideration thereof is respectfully requested.

Claims 2-4, 6, 8, 9, 12-16, 18-20 and 22-24

The comments provided above with respect to Claim 1 are hereby incorporated by reference. Claims 2-4, 6, 8, 9, 12-16, 18-20 and 22-24 are not addressed separately but it is respectfully submitted that these claims are allowable as depending from an allowable independent claim and further in view of the comments provided above. Applicant respectfully submits that Claims 2-4, 6, 8, 9, 12-16, 18-20 and 22-24 are similarly neither anticipated by, nor obvious in view, of the cited references, and reconsideration thereof is respectfully requested.

It is also submitted that these claims also add their own limitations which render them patentable in their own right. Applicant reserves the right to argue these limitations should it become necessary in the future.

IV. Conclusion

In light of the above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and reconsideration thereof is respectfully requested. The Examiner is respectfully requested to telephone the undersigned before an advisory action is issued in order to avoid any unnecessary filing of an appeal.

A Petition for Extension of Time is enclosed herewith, together with the appropriate fee, to extend the time within which to respond until June 4, 2004.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

Date: June 4, 2004 By: _____

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